

REMARKS

The Application has been carefully reviewed in light of the Office Action dated March 19, 2004 (Paper No. 22). Claims 1 to 95 and 97 to 102 are in the application, of which Claims 1, 48, 97, 99 and 101 are independent. Claim 96 is being canceled without prejudice or disclaimer of the subject matter. Claims 1, 5, 33, 34, 48, 80, 81, 97, 99 and 101 are being amended. Reconsideration and further examination are respectfully requested.

The Applicants gratefully acknowledge the indication in the Office Action that Claims 6 to 19, 26 to 29, 40 to 45, 47, 53 to 66, 74 to 76, 87 to 89, 91, 92, 94 and 95 recite allowable subject and would be allowable if rewritten in independent form. The Applicants are not rewriting these claims as it is their belief that the claims from which these claims depend are patentable.

Claims 5 to 19 and 26 to 29 are objected to on formal grounds. In response, the claims are being amended. Reconsideration and withdrawal of the objection are therefore respectfully requested.

Claims 1 to 5, 21 to 25, 30 to 32, 37 to 39, 48 to 52, 68 to 73, 77 to 79, 84 to 86, 90, 96 to 97, 99 and 101 are rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,737,489 (Chou), Claims 20, 35, 36, 46, 67, 82, 83, 93, 98, 100 and 102 are rejected under 35 U.S.C. § 103(a) over Chou and U.S. Patent No. 6,662,180 (Aref), and Claims 33, 34, 80 and 81 are rejected under 35 U.S.C. § 103(a) over Chou and U.S. Patent No. 5,333,275 (Wheatley). Reconsideration and withdrawal of the rejections are respectfully requested.

The present invention generally concerns determining a similarity between a sequence of labels recognized in input data and stored label sequence(s). More particularly, input data is processed to generate a recognized sequence of labels from input data, together with confidence data representing a confidence level that the recognized sequence represents the input data. A measure of similarity between the recognized sequence and a stored sequence is calculated by comparing the recognized sequence and the stored sequence using a combination of predetermined confusion data and the confidence data representative of the confidence level that the recognized sequence represents the input data.

By virtue of this arrangement, similarity is measured based on sequences of labels thereby allowing for fewer recognition errors.

Turning to the language of Claim 1, a comparison apparatus is defined and comprises a receiver, a recognition processor, and a similarity measure. The receiver is operable to receive an input signal. The recognition processor is operable to compare the input signal with stored label models to generate a recognised sequence of labels in the input signal and confidence data representative of the confidence that the recognised sequence of labels is representative of the input signal. The similarity measure calculator is operable to compare the recognised sequence of labels received from the recognition processor with a stored sequence of labels using a combination of i) predetermined confusion data which defines confusability between different labels, and ii) the confidence data received from the recognition processor and representative of the confidence that the received recognized sequence of labels is representative of the input signal, to provide a

measure of the similarity between the recognised sequence of labels and the stored sequence of labels.

The applied art, namely Chou, is not seen to show the claimed invention, particularly as regards the similarity measure calculator comparing a sequence of labels recognized by, and received from, the recognition processor with a stored sequence of labels using a combination of i) predetermined confusion data which defines confusability between different labels, and ii) the confidence data received from the recognition processor and representative of the confidence that the received recognized sequence of labels is representative of the input signal, to provide a measure of the similarity between the recognised sequence of labels and the stored sequence of labels.

Chou is seen to describe a recognition and verification process in which a recognition process is performed to recognize a hypothesis recognized string signal. A verification process receives the recognized string signal segments the string signal into individual words to perform verification and to generate a confidence measure. (See Chou, col. 4, lines 34 to 50.) As stated at col. 5, lines 30 to 36 of Chou, the verification process is word-based, and is therefore not seen to be sequence-based, and is not seen to compare a recognized sequence of labels with a stored sequence of labels. Referring to Chou, commencing at col. 8, line 10 and Figure 2, a hypothesized string of words 55 is segmented into a number of words, each of which is processed individually by the verification process to generate a confidence measure signal for the word. The confidence measure signal generated by the verification process for each word is then summed using equation (1) to obtain a generated confidence measure signal for the whole of the hypothesized string of words.

Thus, Chou is not seen to compare a recognized sequence of labels representing an input signal with a stored sequence of labels. In addition, Chou is seen to generate a confidence measure from an aggregate of confidence measures calculated for each word and is not seen to perform the comparison of sequence of labels using confidence data representing a confidence that the recognized sequence of labels is representative of the input signal. Finally, Chou is not seen to measure similarity between the recognised sequence of labels and the stored sequence of labels by comparing a sequence of labels with a stored sequence of labels using both the confidence data representative of the confidence that the recognized sequence of labels is representative of the input signal and predetermined confusion data which defines confusability between different labels.

Therefore, for at least the foregoing reasons, Claim 1 is believed to be patentable over Chou. Further, Applicants submit that Claims 48, 97, 99 and 101 are also believed to be over Chou for at least the same reasons.

Wheatley and Aref have been reviewed and are not seen to remedy the deficiencies noted above with respect to Chou.

Therefore, for at least the foregoing reasons, Claims 1, 48, 97, 99 and 101 are believed to be in condition for allowance.

The remaining claims are each dependent from the independent claims discussed above and are therefore believed patentable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office by telephone at (714) 540-8700. All correspondence should be directed to our address given below.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Carole A. Quinn", is written over a horizontal line.

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